target volume by any desired fraction, such as one eighth, one third, one half, two thirds, etc.

[0043] After delivery of a first incremental volume of fluid from each of the first source and the second source, the volume of fluid delivered to the destination from the first source and the volume of fluid delivered to the destination from the second source is measured **302**. Such delivery may occur simultaneously and such measurements may be performed by the controller **106** by using pressure transducers contained in the fluid control module **104** or other fluid volume measuring apparatuses. Delivery of the first volume of fluid to the destination is suspended **303** when the first volume exceeds the second volume by a fraction, which may be a predetermined fraction, of the first incremental volume. For example, delivery of the first volume of fluid to the destination may be suspended when the first volume exceeds the second volume by approximately one half of the first incremental volume in order to attain a 1:1 one ratio. A first incremental volume of fluid is then delivered **304** to the destination from the second source, and delivery of the first volume of fluid to the destination is resumed **305**. It will be appreciated that this process may be adapted for a desired ratio other than one-to-one. In such a case, the fluids from different sources may be delivered by incremental volumes that are the same or that are different from each other. It will also be appreciated that this process may be adapted for use with fluids from more than two different sources.

[0044] FIG. **4** is a flow chart illustrating a method for simultaneously delivering a target volume of fluid from two sources in a desired (such as a one-to-one) ratio to a common destination in accordance with yet another embodiment of the invention. The procedure begins in a manner similar to that shown with respect to the embodiment of FIG. **3**. That is, a first volume of fluid from a first source and a second volume of fluid from second source is delivered **401** to the destination in increments each having approximately a first incremental volume. The first incremental volume of fluid is less than the target volume. In this case the first incremental volume is less than one quarter of the target volume. However, as noted above the first incremental volume may be less than the target volume by any desired ratio. After delivery of a first incremental volume of fluid from each of the first source and the second source, the volume of fluid delivered to the destination from the first source and the volume of fluid delivered to the destination from the second source is measured **402**. Again, such measurements may be performed by the controller **106** by using pressure transducers contained in the fluid control module **104** or other fluid volume measuring means. Delivery of the first volume of fluid to the destination is suspended **403** when the first volume exceeds the second volume by a fraction, which may be a predetermined fraction, of the first incremental volume, in this case by one half the first incremental volume. A first incremental volume of fluid is then delivered **404** to the destination from the second source, and delivery of the first volume of fluid to the destination is resumed **405**.

[0045] In order to assure that the target volume is delivered in the desired ratio, a determination is made **406** when approximately the target volume of fluid has been delivered to the destination. The volume of fluid delivered to the destination from the first source and the volume of fluid delivered to the destination from the second source are then measured **407**. Following this measurement, a third volume of fluid from the source that has delivered a smaller volume of fluid to the destination is delivered **408** in increments each having approximately a second incremental volume. The second incremental volume is less than the first incremental volume. As a result of delivering the third volume of fluid, the sum of the volume of fluid delivered to the destination from the first source and the volume of fluid delivered from the second source are in approximately the desired ratio, in this case a one to one ratio. The first volume and the second volume may each be approximately equal to the target volume minus a finish volume. Similarly, the second incremental volume may be less than the finish volume by any desired fraction. For example, in this embodiment, the second incremental volume may be one third the finish volume.

[0046] A system similar to the one described with respect to FIG. **1** may incorporate the processes described above. In this case the fluid control module **104** or other fluid delivery means such as those disclosed in the patents incorporated above, delivers a first volume of fluid to the destination in increments each having approximately a first incremental volume, the first volume of fluid being less than the target volume. The fluid control module **104** will also deliver a second volume of fluid to the destination in increments each having approximately a second incremental volume. Here again, the second incremental volume is less than the first incremental volume, such that the sum of the first volume and the second volume is approximately equal to the target volume. The system additionally includes a valve arrangement, shown generally at **105** for controlling fluid communication between the fluid source or sources and the destination as well as a controller, such as controller **106** or other control means such as a microprocessor or computer. The controller **106** determines the volume of fluid delivered to the destination and for controls the valve arrangement **105** and the fluid control module **104**. The controller **106** may also determine when approximately the target volume minus a finish volume of fluid has delivered to the destination. In addition, the fluid control module **104** may measure the volume of fluid delivered to the destination from the first source and the volume of fluid delivered to the destination from the second source. The fluid control module **104** may then deliver a third volume of fluid from the source that has delivered a smaller volume of fluid to the destination in increments each having approximately a second incremental volume.

[0047] FIG. **5** is a block diagram illustrating an example of a system for employing the methods of FIGS. **3** and **4** above. The system includes a first fluid source **501** and a second fluid source **502**. The first fluid source **501** is in fluid communication with a first pump chamber **507** via valve **503** and the second fluid source **502** is in fluid communication with a second pump chamber **510** via valve **505**. Pump chamber **507** is also in communication with a volume measurement system **508** and pump chamber **510** is in communication with volume measurement system **509**. Alternatively, each pump chamber **507** and **510** may be in communication with a common volume measurement system. Each of the pump chambers **507** and **510** may include flexible membranes as described in the above referenced and incorporated patents. Similarly, each of the volume measurement systems **508** and **509** may include pressure transducers and positive and/or negative pressure reservoirs as are also described in the aforementioned incorporated patents. Each of the pump chambers **507** and **510** is in fluid